Remarks

Claims 1-4 and 6-27 are pending. No claims are added or cancelled by this Response. Claims 1-4, 6-10, 12-15, 17-20, 23, and 26 have been amended. These amendments have not been made for reasons related to patentability, such as those reflected in 35 U.S.C. §§ 101, 102, 103, or 112. No new matter is added by these amendments. Reconsideration of the outstanding rejections is requested in view of the following remarks.

I. Information Disclosure Statement

The Office action states that the listing of references in the specification does not qualify as an Information Disclosure Statement. Applicants filed Information Disclosure Statements on January 16, 2008, and February 5, 2008. Applicants were unable to submit these references prior to the issuance of the October 25, 2007, Office action. Applicants sincerely regret any inconvenience to the Office as a result of the timing of these submissions, or the number of references submitted. However, Applicants have submitted these references in order to comply with their duty of disclosure under 37 C.F.R. § 1.56. Applicants respectfully request that these references be considered by the Office and listed as references considered on any patent issuing from this application.

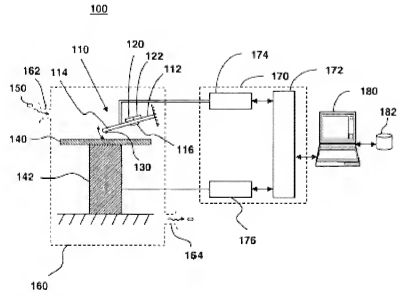
II. Claim Rejections – 35 U.S.C. § 102

Rejection over Lange

The Office action states that claims 1-3, 6-18, and 20-27 are anticipated under 35 U.S.C. § 102(a) by Lange *et al.* (Analytical Chemistry, Vol. 74, No. 13, May 18, 2002, hereinafter "Lange"). Applicants respectfully disagree and request that this rejection be withdrawn.

Although the Office action cites sections of Lange which purportedly describe the use of a cantilever device having a mechanical stop, the Office action does not appear to identify what element of Lange is believed to correspond to the mechanical stop. Before discussing Lange further, it may be useful to review the mechanical stop disclosed in Applicants' specification.

A mechanical stop is depicted in FIG. 1 of the application, reproduced below:



With reference to FIG. 1, a cantilever 110 is coupled to the mechanical stop 140 though the base end 112 of the cantilever 110. Thus, the mechanical stop 140 is a component separate from the cantilever 110 and against which the cantilever 110 can be tapped when oscillated. For example, page 13 of the application describes that "Mechanical stop 140 provides a reference surface for repetitive strikes from cantilevered beam 110."

Applicants' claims are consistent with the specification. Claims 1 and 12 recite "a mechanical stop coupled to a base end of the cantilevered beam" and that the method includes tapping an oscillating cantilevered beam against a mechanical stop. Similarly, claim 26 is directed to a system which includes a cantilevered beam and a "mechanical stop coupled to a base end of each cantilevered beam." The mechanical stop is thus contemplated, and specifically claimed, as being a component separate from the cantilever (although it may be coupled to the cantilever) and against which the cantilever may be struck.

Applicants are unable to find an element in Lange that corresponds to the mechanical stop and, for at least this reason, respectfully disagree that Lange anticipates the pending claims. To the extent the Office action may be premised on something absorbed on the tip of the cantilever (possibly causing a deflection of the cantilever) serving as the mechanical stop, Applicants respectfully disagree that such a construction could serve as the claimed mechanical stop. As described above, the mechanical stop is a separate component against which the cantilever may be tapped upon oscillation. When something is absorbed on the cantilever, the

cantilever may not be struck against it (the cantilever cannot be struck against itself) and the absorbed material would not be separate from the cantilever.

Moreover, statements in Lange not only support that Lange does not disclose a mechanical stop, but would dissuade those of ordinary skill in the art from modifying Lange to include a mechanical stop. For example, at page 3087, Lange states:

> In comparison to cantilevers employed in scanning probe microscopy (SPM), the cantilevers investigated in this work exhibit high quality factors. This is partly because the cantilevers are not operated in close vicinity to a sample surface, and hence, no squeezed-film damping occurs. The distance to the bottom of the etch cavity is 380 μm, i.e., large in comparison to the cantilever dimensions.

Thus, Lange suggests that a cantilever should not be located in close proximity to objects that it might strike while bending.

Because Lange does not provide all elements of independent claims 1, 12, or 26, Applicants respectfully request that the § 102(a) rejections of claims 1, 12, and 26 be withdrawn. Each of the dependent claims is allowable for the reasons stated for the independent claims, and for each of the patentable combinations recited in the dependent claims. Thus, Applications also request that the § 102 (a) rejections of claims 3, 6-11, 13-18, 20-25, and 27 be withdrawn.

Rejection over Thundat

The Office action states that claims 1-4 and 6-27 are anticipated under 35 U.S.C. § 102(b) by U.S. Patent 5,719,324 to Thundat *et al.* ("Thundat"). Applicants respectfully disagree and request that this rejection be withdrawn.

Although the Office action cites sections of Thundat which purportedly describe the use of a cantilever device having a mechanical stop, the Office action does not appear to identify what element of Thundat is believed to correspond to the mechanical stop. Applicants are unable to find an element in Thundat that corresponds to the mechanical stop and, for at least this reason, respectfully disagree that Thundat anticipates the pending claims.

The sections of Thundat cited by the Office action do not describe a mechanical stop. For example, column 7 of Thundat is cited generally by page 6 of the Office action as providing a method of adjusting the position of a mechanical stop. However, column 7 appears to discuss how cantilever bending is influenced by adsorption of materials at various positions on the cantilever.

As described above in the discussion of the rejections over Lange, the claimed mechanical stop is a component separate from the cantilever and against which the cantilever may be struck. Thus, to the extent the Office action contemplates that the cantilevers of Thundat or a portion thereof, may correspond to the mechanical stop, Applicants note that such reasoning would not produce the claimed subject matter. For example, the cantilevered probe could not be tapped against itself, which would seem to follow from considering part of the cantilever as the mechanical stop. Similarly, material placed on, or absorbed on, the cantilever surface would not be separate from the cantilever, as disclosed by Applicants to be a property of a mechanical stop.

For at least the reasons presented above, Applicants respectfully assert that Thundat does not provide all elements of independent claims 1, 12, or 26. Applicants respectfully request that the § 102(b) rejections of claims 1, 12, and 26 be withdrawn. Each of the dependent claims is allowable for the reasons stated for the independent claims, and for each of the patentable combinations recited in the dependent claims. Thus, Applications also request that the § 102 (b) rejections of claims 2-4, 6-11, 13-25, and 27 be withdrawn.

III. Conclusion

Applicants submit that the present application is in condition for allowance. If the Examiner has any questions regarding the application or this response, the Examiner is encouraged to call Applicants' attorney, Ryan A. Heck, at (775) 824-0104.

Respectfully submitted,

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